Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Richland**

Print Date: **3/9/2000**

Site Summary Level: **Hanford Site**

HQ ID: **0394**

Project **RL-WM02 / Canister Storage Building Operations**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose: The Canister Storage Building Operations (CSB Operations) portion of the Spent Nuclear Fuel (SNF) mission supports the Hanford Site Mission to clean up the Site by providing safe, economic, environmentally sound management of Site SNF in a manner which continues interim storage on-site to final disposition, and deactivating the associated facilities. The CSB Operations scope includes:

, , , All the Hanford Site SNF is defined in Hanford Spent Fuel Inventory Baseline, WHC-SD-SNF-TI-001.

, , All new or modified Hanford Site SNF facilities associated with interim storage to final disposition.

, , Management and integration of activities associated with SNF from locations on the Hanford Site other than the K Basins, including the other SNF at the Hanford Site. Operate the complex which includes the CSB and 200 Area Interim Storage Area.

, , , Staging of the Hanford Site SNF for final disposition. This may include additional configuring and packaging of the SNF to meet final disposition requirements, readying it for off-site transfer, and implementing transfer to organization(s) responsible for final disposition.

, , Accomplishment of all SNF activities safely, efficiently, in compliance with applicable regulations, and with the involvement of stakeholders.

, , , Deactivation of the CSB and 200 Area ISA facilities to a condition that meets requirements for transfer to the organization(s) responsible for final disposition of these facilities. Perform activities that foster facility deactivation at no additional cost to SNF. Perform deactivation planning associated with existing and future SNF facilities. Deactivation activities associated with existing and future SNF facilities.

Scope: Specific project scope from the Hanford Site technical baseline is provided below in terms of the systems that the project has responsibility for.

Canister Storage Building

· Maintain Safe & Compliant Canister Storage Building: Following the Operations and Maintenance phase of the Canister Storage Building, maintain the facility structures, systems and equipment, and monitoring systems until the facility is turned over to Environmental Restoration.

· Transition Canister Storage Building: Complete the transition phase of decontamination and decommissioning for the Canister Storage Building. Includes transition deactivation planning and transferring the deactivated facility to Environmental Restoration.

· Decontaminate and Decommission (D&D) Canister Storage Building: Complete the decontamination and decommissioning for theCanister Storage Building. Includes D&D planning and transferring the deactivated facility to Environmental Restoration.

Project Description Narratives

· Store Defense Production Reactor SNF: This function includes systems and activities necessary to provide interim storage until permanent disposition plans are finalized at the national level. Operate and maintain the Canister Storage Building in accordance with governing safety codes and regulations. Provide required resources for safe and compliant operations. Maintain baseline documentation and qualified staff. Perform operational readiness reviews to ensure that safety and compliance are maintained. Administer storage operations. Provide interim storage of the MCOs, to final disposition. Ensure the safety of operations by controlling and monitoring the MCO environment, and by maintaining the integrity of the MCOs. Handle MCOs to support the storage and maintain integrity functions. Collect and contain the incidental waste generated by the store, stage, maintain integrity, and handle functions.

· Disposition Defense Production Reactor SNF: This function includes systems and activities necessary to prepare, stage, loadout, and transport SNF stored within the CSB to final disposition. Sodium bonded Fast Flux Test Facility (FFTF) fuel will be transferred to the CSB for loading into shipping casks prior to being shipped to Argonne National Laboratory-West for treatment.

200 Interim Storage Area (ISA)

· Maintain Safe & Compliant 200 Area Interim Storage Area: Following the Operations and Maintenance phase, maintain the 200 Area Interim Storage Area structures, operating systems and equipment, and monitoring systems within the approved safety and compliance requirements until the facilities are turned over to Environmental Restoration.

· Transition 200 Area Interim Storage Facility: Complete the transition phase of decontamination and decommissioning for the 200 Area Interim Storage Area. Includes transition deactivation planning.

· Decontaminate and Decommission (D&D) 200 Area Interim Storage Area: Complete decontamination and decommissioning of the 200 Area Interim Storage Area. Includes D&D planning and transferring the deactivated facility to Environmental Restoration.

· Store Site-Wide SNF: Interim store Site-Wide SNF in the 200 Area ISA. Operate and maintain the 200 Area Interim Storage Area structures, operating systems, equipment, and monitoring systems within the approved safety and compliance requirements. Plan, coordinate, and schedule all necessary activities required for safe operations. Ensure the safety of operations by monitoring and maintaining the integrity of storage systems.

· Disposition Site-Wide SNF: This function includes systems and activities necessary to prepare, stage, loadout, and transport site-wide SNF stored at the 200 Area ISA to final disposition.

Technical Approach: The end point targets in the Hanford Strategic Plan addressed by this project include:

· Provide safe, stable, interim storage for nuclear materials in the 200 Area pending decisions on their ultimate disposition.

Project Description Narratives

· Spent fuels (TRIGA and light water reactor) and applicable FFTF fuels removed from 400 Area interim storage area to 200 Area.

· Spent fuels removed offsite for final disposition.

· Remove Central Plateau (200 Area) non-essential, surplus buildings and facilities that don't have identified post-cleanup uses.

· Spent fuels consolidated in the 200 Area in safe, stable, cost-effective interim storage pending national decisions on their ultimate disposition.

· Groundwater use remains restricted for a yet to be determined period.

· Spent fuels (sodium bonded EBR-II test assemblies) removed offsite for final disposition.

· Transition high cost surplus facilities to a low cost, stable, deactivated condition.

The technical approach and technology initiatives for the Project to accomplish the Hanford Strategic Plan end point targets are identified below.

Canister Storage Building

· Technical Objective - Canister Storage Building: The CSB will provide low-cost, long-term interim storage of spent nuclear fuel and other high-level radioactive wastes for a period of up to 40 years or longer, prior to final disposition. If storage beyond 40 years is needed it will likely require future refits and facility upgrades. The technical approach will entail strong "conduct of operations" consistent for long-term storage of these materials and wastes. The CSB operation will include such functions as:

· ¸ surveillance and monitoring of the facility
· ¸ safeguards and accountability
· ¸ routine maintenance of equipment
· ¸ facility permitting and regulatory compliance
· ¸ shipment and receipt of materials and wastes generated during operations
· ¸ record keeping.

Project Status in FY 2006:

Canister Storage Building

· The CSB Operations mission will not be complete in FY2006. The CSB will remain operational until the spent nuclear fuel is removed and sent to a final repository or otherwise dispositioned. This operational life may extend in excess of 40 years with appropriate facility upgrades.

200 Interim Storage Area (ISA)

Project Description Narratives

· The CSB Operations mission will not be complete in FY2006. The CSB will remain operational until the spent nuclear fuel is removed and sent to a final repository or otherwise dispositioned. This operational life may extend in excess of 40 years with appropriate facility upgrades.

Post-2006 Project Scope:

Canister Storage Building

· The CSB Operations will continue beyond FY2006. The facility will remain operational until the spent nuclear fuel is removed and sent to a final repository or otherwise dispositioned. The operational life of the CSB facility may extend in excess of 40 years with appropriate facility upgrades.

200 Interim Storage Area (ISA)

· The CSB Operations will continue beyond FY2006. The facility will remain operational until the spent nuclear fuel is removed and sent to a final repository or otherwise dispositioned. The operational life of the CSB facility may extend in excess of 40 years with appropriate facility upgrades.

Project End State

The Hanford Strategic Plan end point targets achieved at completion of the project include:

Hanford Mission End Point Targets Achieved

· Spent fuels removed offsite for final disposition.

· Spent fuels (sodium bonded EBR-II test assemblies) removed offsite for final disposition.

Specific work activities to close the facilities under this Project to be performed by others at the end of this Project's mission are identified below.Canister Storage Building
Work associated with facility performed by Spent Nuclear Fuel Project:
Receive Defense Production Reactor Spent Nuclear Fuel
Design/Construct Canister Storage Building
Work associated with facility performed by Immobilized Tank Waste Storage & Disposal:
Receive & Store IHLW, Part 1
Disposition IHLW, Part 1

200 Interim Storage Area (ISA)
Work associated with facility performed by Spent Nuclear Fuel Project:
Design/Construct 200 Area Interim Storage Area

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Project **RL-WM02 / Canister Storage Building Operations**

Project Description Narratives

Operate & Maintain 200 Area Interim Storage Area
Implement Site-Wide Interim Storage at 200 Area

Cost Baseline Comments:

The ROM cost estimates for the CSB operation are based on the maintenance and surveillance of similar storage facilities at the Hanford site and on engineering studies conducted by the SNF Project. When detailed costs estimates are prepared they will be derived using Activity Based Cost (ABC) estimating.
The ROM estimates reflect design and construction of a fuel repackaging cell to repackage miscellaneous spent nuclear fuel such as fuel retrieved from the LLWBG.
It includes procurement of packaging for SNF from the LLBG as needed, and the repackaging necessary to prepare the fuel for long-term storage. The preparation, packaging and shipment of other spent nuclear fuels to a final repository or other final disposition as currently planned. It assumes the repository is available in FY2015 for DOE materials; spent nuclear fuel and high-level waste retrieval is initiated from CSB vaults and shipments to the repository are initiated. SNF and IHLW shipments to final repository continue through FY2044.
WM02 does not include the construction, modification, incremental operating costs of Vaults 2 and 3, shipment of HLW to the repository and D&D costs for the CSB. These are assumed to be included in RL-TW09.

Safety & Health Hazards:

The primary mission of the Canister Storage Building (CSB) Operations Project is to safely store Spent Nuclear Fuel (SNF) and Immobilized High Level Waste (IHLW) prior to permanent disposition, and to safely transfer the stored SNF and IHLW to the federal repository for disposal.

The CSB contains three vaults -- Vault 1 for SNF and Vaults 2 and 3 for IHLW interim storage. The safety authorization basis of the SNF Vault 1 will be transferred from the SNF Project (RL-WM01) and amended to reflect the addition of IHLW. Implementation of this Project enables reduction of risks to the public, worker, and the environment by providing safe interim storage for materials and wastes. By providing the mechanisms for their off-site disposition and final disposal, the risks to the public, workers, and the environment at the Hanford Site are permanently eliminated.

During CSB operation, radiation levels and exposure will be low and there will be a low probability of accidents or unintentional releases due to the additional protective barriers provided.

Safety & Health Work Performance:

CSB Operations is responsible for preparing facilities to stage, loadout and transport SNF stored within CSB as well as Site-Wide SNF stored at the 200 Area Interim Storage Area (ISA); and the operation of the CSB complex after the completion of the SNF Project (RL-WM01) until all wastes and materials are removed and shipped off site. The CSB complex includes the Canister Storage Building and the 200 Area ISA. The CSB Operations Project will provide interim storage operations, maintenance and surveillance of the following materials until final disposition:
- SNF transferred from the K Basins to the CSB as part of the SNF Project (RL-WM01)
- Sitewide SNF includes: [Neutron Radiography Facility (NRF)/Test Reactor Isotope/General Atomics (TRIGA), Shippingport Pressurized Water Reactor (PWR) Core 2 SNF, Light Water Reactor (LWR) SNF, TRIGA SNF retrieved from Low-Level Waste Burial Grounds and Fast Flux Test Facility (FFTF) SNF] currently located in facilities across the site.

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Project **RL-WM02 / Canister Storage Building Operations**

Project Description Narratives

- Immobilized high level waste from Tank Waste Remediation System (TWRS) (as part of TW-09).

The CSB is designed to require a minimum of intervention to maintain safe operations. CSB completion occurs when stored SNF is transferred to the national repository, FY 2040, and the D&D CSB facilities are turned over to ER.

The Site-Wide SNF subproject completion occurs upon turnover to CSB continuing operations at the end of FY 2004. Site-Wide SNF continuing operations completion occurs when stored SNF is transferred to the national repository, FY 2017, and the D&D facilities are tumed over to ER.

PBS Comments:

Placement of stabilized fuel in the CSB for long-term storage will fulfill applicable DOE commitments found in Tri-Party Agreement milestones M-34. Activities will be coordinated with the SNF Project RL-WM01, and with the TWRS Project RL-TW09 Immobilized Tank Waste Storage and Disposal, and Yucca Mountain Geologic Repository.

The operation of CSB will be driven by compliance with federal and state regulations, Tri-Party Agreements, DNFSB recommendations, DOE Orders and industry standards in place during the life cycle of the facility and its operation.

Baseline Validation Narrative:

N/A

General PBS Information

Project Validated? **Date Validated:**

Has Headquarters reviewed and approved project? Yes

Date Project was Added: 12/1/1997

Baseline Submission Date:

FEDPLAN Project? Yes

Drivers:	**CERCLA**	**RCRA**	**DNFSB**	**AEA**	**UMTRCA**	**State**	**DOE Orders**	**Other**
						Y	Y	Y

Project Identification Information

DOE Project Manager: Elizabeth D Sellers

DOE Project Manager Phone Number: 509-376-7465

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Project **RL-WM02 / Canister Storage Building Operations**

General PBS Information

DOE Project Manager Fax Number: 509-373-9837

DOE Project Manager e-mail address: Elizabeth_D_Sellers@RL.GOV

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	12,418	1,048,735	1,061,153						0	0	0	0	0	8,318	4,100
PBS Baseline (constant 1999 dollars)	10,831	572,455	583,286						0	0	0	0	0	7,307	3,524
PBS EM Baseline (current year dollars)	12,418	1,048,735	1,061,153						0	0	0	0	0	8,318	4,100
PBS EM Baseline (constant 1999 dollars)	10,831	572,455	583,286						0	0	0	0	0	7,307	3,524

	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS Baseline (current year dollars)	3,154	5,655	3,357	3,594	85,368	162,428	158,205	176,391	196,666	219,273	28,551	6,093				
PBS Baseline (constant 1999 dollars)	2,653	4,654	2,703	2,832	63,040	107,579	93,979	93,980	93,979	93,979	10,976	2,101				
PBS EM Baseline (current year dollars)	3,154	5,655	3,357	3,594	85,368	162,428	158,205	176,391	196,666	219,273	28,551	6,093				

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	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS EM Baseline (constant 1999 dollars)	2,653	4,654	2,703	2,832	63,040	107,579	93,979	93,980	93,979	93,979	10,976	2,101				

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
			2.10%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%

2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%	2.20%				

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2046

Current Projected End Date of Project: 9/30/2046

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars): 424,577

Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars): 424,577

Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): 436,041

Actual 1997 Cost:

Actual 1998 Cost:

Inflation Adjustment (2.7% to convert 1998 to 1999 dollars): 11,464

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		

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Project Reconciliation

Cost Reductions Due to Efficiencies (-):	
Cost Associated with New Scope (+):	
Cost Growth Associated with Scope Previously Reported (+):	
Cost Reductions Due to Science & Technology Efficiencies (-):	
Subtotal:	436,041
Additional Amount to Reconcile (+):	147,245
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**583,286**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Begin Canister Storage Building Operations Project	PBS-97-045		10/1/2004								
PBS Mission Completion	PBS-MC-045		9/30/2046								
PBS Project End	PBS-PE-045		9/30/2046								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Begin Canister Storage Building Operations Project	PBS-97-045			Y							Administrative input to document the start of this PBS.
PBS Mission Completion	PBS-MC-045					Y					Administrative input to document the mission completion of this PBS.
PBS Project End	PBS-PE-045				Y						Administrative input to document the project end of this PBS.

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 20(

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Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 20(
Fac.														
Decom.- Assess.	NF	0.00	0.00	0.00										
Fac.														
Decom- Cleanup	NF	0.00	2.00	2.00										
Fac.														
Deact. During Per.	NF	0.00	2.00	2.00										

Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
Fac.													
Decom.- Assess.	NF												
Fac.													
Decom- Cleanup	NF												
Fac.													
Deact. During Per.	NF												

Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
Fac.										
Decom.- Assess.	NF								3.00	3.00
Fac.										
Decom- Cleanup	NF			2.00					1.00	3.00
Fac.										
Deact. During Per.	NF			2.00					1.00	3.00

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Facility Decommissioning

Site Code	RSF ID	Change Flag	Description	Class/Subclass	Hazard	Plan. Assess. Year	Fore. Assess. Year	Actual Assess. Date	Plan. Deac. Year	Fore. Deac. Year	Actual Deac. Date	Plan. Comp. Year	Fore. Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
HASI	4019		200 Interim Storage Area (ISA)	\					2046			2046						
HASI	8721		212H	\														
HASI	8722		Canister Storage Building	\					2046			2046						

Facility Deactivation

Site Code	RSF ID	Change Flag	Description	Class/Subclass	Hazard	Plan. Assess. Year	Fore. Assess. Year	Actual Assess. Date	Plan. Deac. Year	Fore. Deac. Year	Actual Deac. Date	Plan. Comp. Year	Fore. Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
HASI	4019		200 Interim Storage Area (ISA)	\					2046			2046						
HASI	8721		212H	\														
HASI	8722		Canister Storage Building	\					2046			2046						

Technology Needs

Site Need Code: RL-SNF04

Site Need Name: Multi-Canister Overpack (MCO) Monitoring Methods

Focus Area Work Package ID:

Focus Area Work Package:

Focus Area:

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01487: SNF-02 - Dry K Basins Fuel	Y	N